CONTAINS NO CBI

GE Astro Space

90-8900064

Astro-Space Division
General Electric Company
P.O. Box 800, Princeton, NJ 08543-0800
609 426-3400

September 12, 1989

Office of Toxic Substances,TS-790
Document Processing Center
U.S.Environmental Protection Agency
401 M Street, SW
Washington, DC 20460

Attn: Cair Reporting Office

Dear sirs:

The attached Cair reporting Form is for the substance 2,4 Toluene Diisocyanate, (TDI) contained in the Morton Thiokol Product Solithane 113. The chemical abstract service registry number is 584-84-9. The facility this form represents is the General Electric Astro Space Division located in East Windsor New Jersey. The Mailing Address is P.O. Box 800 Princeton N.J. 08543-0800 Attn. Plant Engineering.

We use approximately 47 Kg of Solithane per year which yields approximately 3 Kg of TDI as actually processed.

If there are any questions please call me at 609-426-2176.

Sincerely,

Glenn C Merritt
Adm. Facility Contracts

CONTAINS NO CBI

EPA

Form Approved
OMB No. 2010-0019
Approval Expires 12-31-89

90-890000641

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Comprehensive Assessment Information Rule

REPORTING FORM

When completed, send this form to:	For Agency Use Only:
Document Processing Center Office of Toxic Substances, TS-790 U.S. Environmental Protection Agency 401 M Street, SW Washington, DC 20460 Attention: CAIR Reporting Office	Date of Receipt: _____ Document Control Number: _____ Docket Number: _____

EPA Form 7710-52

CAIR REPORTING FORM CHECKLIST

THIS CHECKLIST IS NOT REQUIRED TO BE SUBMITTED, IT IS FOR RESPONDENT'S INTERNAL USE ONLY

This form is intended to gather information on a specific listed substance that is manufactured, imported, or processed at one facility. Respondents must answer only those sections or specific questions required in the CAIR rule.

Respondents may use the same form each time they must report. The original copy of the form received by respondents should be kept on file and used to make copies of the questions required to be answered. These copies may then be circulated to those employees who will complete the form. Respondents must submit only one copy of each question rather than compiling parts of each question from various employees and submitting them together as one question.

Respondents need only supply information on the form that is "known to or reasonably ascertainable by" the respondent. Refer to the glossary for this definition. All reports with incomplete responses will be assessed as invalid and a Notice of Noncompliance Error Letter and a copy of the question will be sent to you for completion.

Before completing any portion of this form, please read the instruction booklet. The booklet contains general instructions on how to comply with the rule, supplemental instructions and sample answers for many questions, and a glossary containing definitions of key terms. Refer to the glossary whenever an unknown term appears to examine the definition provided.

If you cannot determine your reporting obligations, you should call the TSCA Assistance Office, U.S. EPA, at (202) 554-1404. To obtain additional forms, write to the TSCA Assistance Office (TS-779), ATTN: CAIR Form Request, Office of Toxic Substances, Environmental Protection Agency, Room E-543, 401 M St., SW, Washington, DC 20460, or call at (202) 554-1404.

BEFORE RETURNING YOUR COMPLETED CAIR FORM PLEASE CHECK THE FOLLOWING:

__X__ 1. Have you completed and included Section 1 for each form you are submitting?

__X__ 2. Have you submitted a standard chemical name and Chemical Abstract Service Registry Number for each chemical you are reporting on?

__X__ 3. Does your submitted form include the original certification signatures as required for questions 1.06, 1.07, and 1.08?

X 4. Have you submitted a completed separate form for each substance you are required to report on?

X 5. Have you submitted a completed separate form for each site at which you manufacture, import, or process a listed substance?

X 6. For each listed substance you must report on, have you reported on all activities you engage in at each site using the listed substance on the same reporting form?

N/A 7. If you are claiming information as Confidential Business Information (CBI), have you completed the CBI substantiation form in Appendix II of the form for each category containing CBI? Failure to submit a completed CBI substantiation form with a reporting form containing CBI will result in the waiver of your claim of confidentiality.

X 8. For each question that you are required to answer, have you responded by either providing the data, stating not applicable ("N/A"), or, if the question permits, stating unknown ("UK")?

X 9. Have you right justified your responses to questions asked that require respondents to give a numeric response in a series of boxes (e.g., the answer "372" is entered as [0][0][3][7][2])?

X 10. Have your responses been given in alpha, numeric or alpha-numeric form such as 3 million or 3,000,000? Responses must not be given in scientific notation such as 3×10^6.

X 11. If you needed additional space to report the required data, have you checked the continuation sheet box at the bottom of each page that requires additional space; attached additional copies of the specific questions of this form that contain additional information; and listed the attachments in Appendix I of the reporting form?

SECTION 1 GENERAL MANUFACTURER, IMPORTER, AND PROCESSOR INFORMATION

PART A GENERAL REPORTING INFORMATION

1.01 This Comprehensive Assessment Information Rule (CAIR) Reporting Form has been completed in response to the Federal Register Notice of..... [0][6] (mo.) [2][9] (day) [8][9] (year)

CBI

[ ] a. If a Chemical Abstracts Service Number (CAS No.) is provided in the Federal Register, list the CAS No. ..... [0][0][0][5][8][4]-[8][4]-[9]

b. If a chemical substance CAS No. is not provided in the Federal Register, list either (i) the chemical name, (ii) the mixture name, or (iii) the trade name of the chemical substance as provided in the Federal Register.

(i) Chemical name as listed in the rule .....2,4-Toluene Diisocyanate

(ii) Name of mixture as listed in the rule .... _____

(iii) Trade name as listed in the rule ..... Solithane 113

c. If a chemical category is provided in the Federal Register, report the name of the category as listed in the rule, the chemical substance CAS No. you are reporting on which falls under the listed category, and the chemical name of the substance you are reporting on which falls under the listed category.

Name of category as listed in the rule ..... _____

CAS No. of chemical substance ..... [ ][ ][ ][ ][ ][ ]-[ ][ ]-[ ]

Name of chemical substance ..... _____

1.02 Identify your reporting status under CAIR by circling the appropriate response(s).

CBI

Manufacturer 1

[ ] Importer 2

Processor ..... (3)

X/P manufacturer reporting for customer who is a processor 4

X/P processor reporting for customer who is a processor 5

[ ] Mark (X) this box if you attach a continuation sheet.

1.03 Does the substance you are reporting on have an "x/p" designation associated with it in the above-listed Federal Register Notice?

CBI

[ ]

(Yes) ..... [ ] Go to question 1.04

No ..... [ ] Go to question 1.05

1.04 a. Do you manufacture, import, or process the listed substance and distribute it under a trade name(s) different than that listed in the Federal Register Notice? Circle the appropriate response.

CBI

[ ]

Yes 1

(No) 2

b. Check the appropriate box below:

[X] You have chosen to notify your customers of their reporting obligations

Provide the trade name(s) .... Solithane 113 (Morton Thiokol)

[ ] You have chosen to report for your customers

[ ] You have submitted the trade name(s) to EPA one day after the effective date of the rule in the Federal Register Notice under which you are reporting.

1.05 If you buy a trade name product and are reporting because you were notified of your reporting requirements by your trade name supplier, provide that trade name.

CBI

[ ]

Trade name ..... _____

Is the trade name product a mixture? Circle the appropriate response.

(Yes) 1

No 2

1.06 Certification -- The person who is responsible for the completion of this form must sign the certification statement below:

CBI

[ ]

"I hereby certify that, to the best of my knowledge and belief, all information entered on this form is complete and accurate."

Glenn C Merritt	[signature]	09/12/89
NAME	SIGNATURE	DATE SIGNED

Facility Contract ADM.	(609) 426 - 2176
TITLE	TELEPHONE NO.

[ ] Mark (X) this box if you attach a continuation sheet.

1.07 Exemptions From Reporting -- If you have provided EPA or another Federal agency with the required information on a CAIR Reporting Form for the listed substance within the past 3 years, and this information is current, accurate, and complete for the time period specified in the rule, then sign the certification below. You are required to complete section 1 of this CAIR form and provide any information now required but not previously submitted. Provide a copy of any previous submissions along with your Section 1 submission.

CBI
[ ]

"I hereby certify that, to the best of my knowledge and belief, all required information which I have not included in this CAIR Reporting Form has been submitted to EPA within the past 3 years and is current, accurate, and complete for the time period specified in the rule."

NAME	SIGNATURE	DATE SIGNED
TITLE	( ) - TELEPHONE NO.	DATE OF PREVIOUS SUBMISSION

1.08 CBI Certification -- If you have asserted any CBI claims in this report you must certify that the following statements truthfully and accurately apply to all of those confidentiality claims which you have asserted.

CBI
[ ]

"My company has taken measures to protect the confidentiality of the information, and it will continue to take these measures; the information is not, and has not been, reasonably ascertainable by other persons (other than government bodies) by using legitimate means (other than discovery based on a showing of special need in a judicial or quasi-judicial proceeding) without my company's consent; the information is not publicly available elsewhere; and disclosure of the information would cause substantial harm to my company's competitive position."

NAME	SIGNATURE	DATE SIGNED
TITLE	( ) - TELEPHONE NO.	

[ ] Mark (X) this box if you attach a continuation sheet.

PART B CORPORATE DATA

1.09 Facility Identification

CBI Name [G][E][ ][A][S][T][R][O][ ][S][P][A][C][E][ ][D][I][V][I][S][I][O][N][ ][ ][ ]

[ ] Address [P][O][ ][B][O][X][ ][8][0][0][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]
Street

[P][R][I][N][C][E][T][O][N][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]
City

[N][J] [0][8][5][4][3]--[0][8][0][0]
State Zip

Dun & Bradstreet Number .....[0][0]-[3][8][6]-[0][3][8][6]

EPA ID Number .....[D][0][0][1][6][4][3][8][4]

Employer ID Number .....[0][6][8][9][3][4][0][ ]

Primary Standard Industrial Classification (SIC) Code .....[3][6][6][2]

Other SIC Code .....[ ][ ][ ][ ]

Other SIC Code .....[ ][ ][ ][ ]

1.10 Company Headquarters Identification

CBI Name [G][E][N][E][R][A][L][ ][E][L][E][C][T][R][I][C][ ][C][O][M][P][A][N][Y][ ][ ]

[ ] Address [3][1][3][5][ ][E][A][S][T][ ][O][N][ ][T][U][R][N][P][I][K][E][ ][ ][ ][ ][ ]
Street

[F][A][I][R][F][I][E][L][D][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]
City

[C][T] [0][6][4][3][1]--[ ][ ][ ][ ]
State Zip

Dun & Bradstreet Number .....N/A.....[ ][ ]-[ ][ ][ ]-[ ][ ][ ][ ]

Employer ID Number .....[ ][ ][ ][ ][ ][ ][ ][ ]

[ ] Mark (X) this box if you attach a continuation sheet.

1.11 Parent Company Identification

CBI Name [G][E][N][E][R][A][L][ ][E][L][E][C][T][R][I][C][ ][C][O][M][P][A][N][Y][ ][ ]

[ ] Address [3][1][3][5][ ][E][A][S][T][ ][O][N][ ][T][U][R][N][P][I][K][E][ ][ ][ ][ ][ ]
Street

[F][A][I][R][F][I][E][L][D][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]
City

[C][T] [0][6][4][3][L][ ]--[ ][ ][ ][ ]
State Zip

Dun & Bradstreet Number .....N/A.....[ ][ ]-[ ][ ][ ]-[ ][ ][ ][ ]

1.12 Technical Contact

CBI Name [ ][L][E][N][N][ ][M][E][R][R][I][T][T][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

[ ] Title [A][D][M][ ][E][A][C][I][L][I][T][Y][ ][C][O][N][T][R][A][C][T][S][ ][ ][ ][ ]

Address [P][O][ ][B][O][X][ ][8][0][0][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]
Street

[P][r][i][n][c][e][t][o][n][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]
City

[N][J] [0][8][5][4][3][ ]--[ ][ ][ ][ ]
State Zip

Telephone Number .....[ ][ ][ ]-[ ][ ][ ]-[ ][ ][ ][ ]

1.13 This reporting year is from ..... [ ][ ] [ ][ ] to [ ][ ] [ ][ ]
Mo. Year Mo. Year

[ ] Mark (X) this box if you attach a continuation sheet.

1.14 Facility Acquired -- If you purchased this facility during the reporting year, provide the following information about the seller:

N/A

CBI Name of Seller [ ]

[ ] Mailing Address [ ]
Street

[ ]
City

[ ][ ] [ ][ ][ ][ ][ ]--[ ][ ][ ][ ]
State Zip

Employer ID Number .....[ ][ ][ ][ ][ ][ ][ ][ ]

Date of Sale .....[ ][ ] [ ][ ] [ ][ ]
Mo. Day Year

Contact Person [ ]

Telephone Number .....[ ][ ][ ]-[ ][ ][ ]-[ ][ ][ ][ ]

1.15 Facility Sold -- If you sold this facility during the reporting year, provide the following information about the buyer:

N/A

CBI Name of Buyer [ ]

[ ] Mailing Address [ ]
Street

[ ]
City

[ ][ ] [ ][ ][ ][ ][ ]--[ ][ ][ ][ ]
State Zip

Employer ID Number .....[ ][ ][ ][ ][ ][ ][ ][ ]

Date of Purchase .....[ ][ ] [ ][ ] [ ][ ]
Mo. Day Year

Contact Person [ ]

Telephone Number .....[ ][ ][ ]-[ ][ ][ ]-[ ][ ][ ][ ]

[ ] Mark (X) this box if you attach a continuation sheet.

1.16 For each classification listed below, state the quantity of the listed substance that was manufactured, imported, or processed at your facility during the reporting year.

CBI [ ]	Classification	Quantity (kg/yr)
	Manufactured	NA
	Imported	NA
	Processed (include quantity repackaged)	3.00
	Of that quantity manufactured or imported, report that quantity:	
	In storage at the beginning of the reporting year	NA
	For on-site use or processing	NA
	For direct commercial distribution (including export)	NA
	In storage at the end of the reporting year	NA
	Of that quantity processed, report that quantity:	
	In storage at the beginning of the reporting year	3.00
	Processed as a reactant (chemical producer)	NA
	Processed as a formulation component (mixture producer)	3.00
	Processed as an article component (article producer)	NA
	Repackaged (including export)	NA
	In storage at the end of the reporting year	0

[ ] Mark (X) this box if you attach a continuation sheet.

PART C IDENTIFICATION OF MIXTURES

1.17 Mixture -- If the listed substance on which you are required to report is a mixture or a component of a mixture, provide the following information for each component chemical. (If the mixture composition is variable, report an average percentage of each component chemical for all formulations.)

CBI

[ ]

Component Name	Supplier Name	Average % Composition by Weight (specify precision, e.g., 45% ± 0.5%)
2,4 Toluene Diisocyanate	Morton Thiokol	6.5 .5
Isocyanate terminated polylol	Morton Thiokol	93.5 .5
NA	NA	NA
NA	NA	NA
NA	NA	NA
NA	NA	NA
	Total	100%

[ ] Mark (X) this box if you attach a continuation sheet.

SECTION 2 MANUFACTURER, IMPORTER, AND PROCESSOR VOLUME AND USE

2.01 State the total number of years, including the reporting year, that your facility has manufactured, imported, or processed the listed substance.

CBI

[ ]

Number of years manufactured ..... NA yrs.

Number of years imported ..... NA yrs.

Number of years processed ..... @ 25 yrs.

2.02 State the quantity of the listed substance that your facility manufactured, imported, or processed during the corporate fiscal year preceding the reporting year.

CBI

[ ]

Year ending ..... [1][2] Mo. [8][7] Year

Quantity manufactured ..... NA kg

Quantity imported ..... NA kg

Quantity processed ..... 3.00 kg

2.03 State the quantity of the listed substance that your facility manufactured, imported, or processed during the 2 corporate fiscal years preceding the reporting year in descending order.

CBI

[ ]

Year ending ..... [1][2] Mo. [8][7] Year

Quantity manufactured ..... NA kg

Quantity imported ..... NA kg

Quantity processed ..... 3.00 kg

Year ending ..... [1][2] Mo. [8][6] Year

Quantity manufactured ..... NA kg

Quantity imported ..... NA kg

Quantity processed ..... 3.00 kg

[ ] Mark (X) this box if you attach a continuation sheet.

2.04 State the quantity of the listed substance that your facility manufactured, imported, or processed during the 3 corporate fiscal years preceding the reporting year in descending order.

CBI

[ ] Year ending ..... [1][2] Mo. [8][7] Year

Quantity manufactured ..... NA kg

Quantity imported ..... NA kg

Quantity processed ..... 3.00 kg

Year ending ..... [1][2] Mo. [8][6] Year

Quantity manufactured ..... NA kg

Quantity imported ..... NA kg

Quantity processed ..... 3.00 kg

Year ending ..... [1][2] Mo. [8][5] Year

Quantity manufactured ..... NA kg

Quantity imported ..... NA kg

Quantity processed ..... 6.00 kg

2.05 Specify the manner in which you manufactured the listed substance. Circle all appropriate process types.

CBI

[ ]

Continuous process 1

Semicontinuous process 2

Batch process 3

[ ] Mark (X) this box if you attach a continuation sheet.

2.06 Specify the manner in which you processed the listed substance. Circle all
CBI appropriate process types.

[ ]

Continuous process 1

Semicontinuous process 2

Batch process ..... (3)

2.07 State your facility's name-plate capacity for manufacturing or processing the listed substance. (If you are a batch manufacturer or batch processor, do not answer this
CBI question.) N/A

[ ]

Manufacturing capacity ..... NA kg/yr

Processing capacity ..... NA kg/yr

2.08 If you intend to increase or decrease the quantity of the listed substance manufactured, imported, or processed at any time after your current corporate fiscal year, estimate the increase or decrease based upon the reporting year's production
CBI volume.

[ ]

	Manufacturing Quantity (kg)	Importing Quantity (kg)	Processing Quantity (kg)
Amount of increase			1.0-2.0
Amount of decrease			NA

[ ] Mark (X) this box if you attach a continuation sheet.

2.09 For the three largest volume manufacturing or processing process types involving the listed substance, specify the number of days you manufactured or processed the listed substance during the reporting year. Also specify the average number of hours per day each process type was operated. (If only one or two operations are involved, list those.)

CBI

[ ]

	Days/Year	Average Hours/Day
Process Type #1 (The process type involving the largest quantity of the listed substance.)		
Manufactured	NA	NA
Processed	260	1.5-2.0
Process Type #2 (The process type involving the 2nd largest quantity of the listed substance.)		
Manufactured	NA	NA
Processed	NA	NA
Process Type #3 (The process type involving the 3rd largest quantity of the listed substance.)		
Manufactured	NA	NA
Processed	NA	NA

2.10 State the maximum daily inventory and average monthly inventory of the listed substance that was stored on-site during the reporting year in the form of a bulk chemical.

CBI

[ ]

Maximum daily inventory	3.00	kg
Average monthly inventory	@ 1.5	kg

[ ] Mark (X) this box if you attach a continuation sheet.

2.11 Related Product Types -- List any byproducts, coproducts, or impurities present with the listed substance in concentrations greater than 0.1 percent as it is manufactured, imported, or processed. The source of byproducts, coproducts, or impurities means the source from which the byproducts, coproducts, or impurities are made or introduced into the product (e.g., carryover from raw material, reaction product, etc.). N/A

CBI

[ ]

CAS No.	Chemical Name	Byproduct, Coproduct or Impurity[1]	Concentration (%) (specify ± % precision)	Source of Byproducts, Coproducts, or Impurities
NA	NA	NA	NA	NA
NA	NA	NA	NA	NA
NA	NA	NA	NA	NA
NA	NA	NA	NA	NA
NA	NA	NA	NA	NA
NA	NA	NA	NA	NA

[1]Use the following codes to designate byproduct, coproduct, or impurity:

B = Byproduct
C = Coproduct
I = Impurity

[ ] Mark (X) this box if you attach a continuation sheet.

2.12 Existing Product Types -- List all existing product types which you manufactured, imported, or processed using the listed substance during the reporting year. List the quantity of listed substance you use for each product type as a percentage of the total volume of listed substance used during the reporting year. Also list the quantity of listed substance used captively on-site as a percentage of the value listed under column b., and the types of end-users for each product type. (Refer to the instructions for further explanation and an example.)

CBI
[ ]

a. Product Types[1]	b. % of Quantity Manufactured, Imported, or Processed	c. % of Quantity Used Captively On-Site	d. Type of End-Users[2]
K	100%	100%	CM
NA	NA	NA	NA
NA	NA	NA	NA
NA	NA	NA	NA
NA	NA	NA	NA
NA	NA	NA	NA

[1]Use the following codes to designate product types:

A = Solvent
B = Synthetic reactant
C = Catalyst/Initiator/Accelerator/Sensitizer
D = Inhibitor/Stabilizer/Scavenger/Antioxidant
E = Analytical reagent
F = Chelator/Coagulant/Sequestrant
G = Cleanser/Detergent/Degreaser
H = Lubricant/Friction modifier/Antiwear agent
I = Surfactant/Emulsifier
J = Flame retardant
K = Coating/Binder/Adhesive and additives
L = Moldable/Castable/Rubber and additives
M = Plasticizer
N = Dye/Pigment/Colorant/Ink and additives
O = Photographic/Reprographic chemical and additives
P = Electrodeposition/Plating chemicals
Q = Fuel and fuel additives
R = Explosive chemicals and additives
S = Fragrance/Flavor chemicals
T = Pollution control chemicals
U = Functional fluids and additives
V = Metal alloy and additives
W = Rheological modifier
X = Other (specify) NA

[2]Use the following codes to designate the type of end-users:

I = Industrial
CM = Commercial
CS = Consumer
H = Other (specify) NA

[ ] Mark (X) this box if you attach a continuation sheet.

2.13 Expected Product Types -- Identify all product types which you expect to manufacture, import, or process using the listed substance at any time after your current corporate fiscal year. For each use, specify the quantity you expect to manufacture, import, or process for each use as a percentage of the total volume of listed substance used during the reporting year. Also list the quantity of listed substance used captively on-site as a percentage of the value listed under column b., and the types of end-users for each product type. (Refer to the instructions for further explanation and an example.)

CBI

[ ]

a. Product Types[1]	b. % of Quantity Manufactured, Imported, or Processed	c. % of Quantity Used Captively On-Site	d. Type of End-Users[2]
K	100%	100%	CM
NA	NA	NA	NA
NA	NA	NA	NA
NA	NA	NA	NA
NA	NA	NA	NA
NA	NA	NA	NA

[1]Use the following codes to designate product types:

A = Solvent
B = Synthetic reactant
C = Catalyst/Initiator/Accelerator/Sensitizer
D = Inhibitor/Stabilizer/Scavenger/Antioxidant
E = Analytical reagent
F = Chelator/Coagulant/Sequestrant
G = Cleanser/Detergent/Degreaser
H = Lubricant/Friction modifier/Antiwear agent
I = Surfactant/Emulsifier
J = Flame retardant
K = Coating/Binder/Adhesive and additives
L = Moldable/Castable/Rubber and additives
M = Plasticizer
N = Dye/Pigment/Colorant/Ink and additives
O = Photographic/Reprographic chemical and additives
P = Electrodeposition/Plating chemicals
Q = Fuel and fuel additives
R = Explosive chemicals and additives
S = Fragrance/Flavor chemicals
T = Pollution control chemicals
U = Functional fluids and additives
V = Metal alloy and additives
W = Rheological modifier
X = Other (specify) NA

[2]Use the following codes to designate the type of end-users:

I = Industrial
CM = Commercial
CS = Consumer
H = Other (specify) NA

[ ] Mark (X) this box if you attach a continuation sheet.

2.14 Final Product -- Complete the following table for each type of final product manufactured, imported, or processed at your facility that contains the listed substance other than as an impurity. No listed substance remains

CBI

[ ] N/A

a. Product Type[1]	b. Final Product's Physical Form[2]	c. Average % Composition of Listed Substance in Final Product	d. Type of End-Users[3]
NA	NA	NA	NA
NA	NA	NA	NA
NA	NA	NA	NA
NA	NA	NA	NA
NA	NA	NA	NA

[1]Use the following codes to designate product types:

A = Solvent
B = Synthetic reactant
C = Catalyst/Initiator/Accelerator/Sensitizer
D = Inhibitor/Stabilizer/Scavenger/Antioxidant
E = Analytical reagent
F = Chelator/Coagulant/Sequestrant
G = Cleanser/Detergent/Degreaser
H = Lubricant/Friction modifier/Antiwear agent
I = Surfactant/Emulsifier
J = Flame retardant
K = Coating/Binder/Adhesive and additives
L = Moldable/Castable/Rubber and additives
M = Plasticizer
N = Dye/Pigment/Colorant/Ink and additives
O = Photographic/Reprographic chemical and additives
P = Electrodeposition/Plating chemicals
Q = Fuel and fuel additives
R = Explosive chemicals and additives
S = Fragrance/Flavor chemicals
T = Pollution control chemicals
U = Functional fluids and additives
V = Metal alloy and additives
W = Rheological modifier
X = Other (specify) NA

[2]Use the following codes to designate the final product's physical form:

A = Gas
B = Liquid
C = Aqueous solution
D = Paste
E = Slurry
F1 = Powder
F2 = Crystalline solid
F3 = Granules
F4 = Other solid
G = Gel
H = Other (specify) NA

[3]Use the following codes to designate the type of end-users:

I = Industrial
CM = Commercial
CS = Consumer
H = Other (specify) NA

[ ] Mark (X) this box if you attach a continuation sheet.

2.15 Circle all applicable modes of transportation used to deliver bulk shipments of the
CBI listed substance to off-site customers.

[ ] N/A No Bulk shipments of listed substances are made 1

Truck 2

Railcar 3

Barge, Vessel 4

Pipeline 5

Plane 6

Other (specify) _____ 6

2.16 Customer Use -- Estimate the quantity of the listed substance used by your customers or prepared by your customers during the reporting year for use under each category
CBI of end use listed (i-iv).

[ ]

Category of End Use

i. Industrial Products

Chemical or mixture ..... NA kg/yr

Article ..... NA kg/yr

ii. Commercial Products

Chemical or mixture ..... NA kg/yr

Article ..... Less Than 1 kg/yr

iii. Consumer Products

Chemical or mixture ..... NA kg/yr

Article ..... NA kg/yr

iv. Other

Distribution (excluding export) ..... NA kg/yr

Export ..... NA kg/yr

Quantity of substance consumed as reactant ..... NA kg/yr

Unknown customer uses ..... NA kg/yr

[ ] Mark (X) this box if you attach a continuation sheet.

2.17 State the quantity of the listed substance that you exported during the reporting year.

CBI

[ ]

In bulk	NA	kg/yr
As a mixture	Less Than 1	kg/yr
In articles	NA	kg/yr

[ ] Mark (X) this box if you attach a continuation sheet.

SECTION 3 PROCESSOR RAW MATERIAL IDENTIFICATION

PART A GENERAL DATA

3.01 Specify the quantity purchased and the average price paid for the listed substance for each major source of supply listed. Product trades are treated as purchases.
CBI The average price is the market value of the product that was traded for the listed substance.
[ ]

Source of Supply	Quantity (kg)	Average Price ($/kg)
The listed substance was manufactured on-site.	NA	NA
The listed substance was transferred from a different company site.	NA	NA
The listed substance was purchased directly from a manufacturer or importer.	NA	NA
The listed substance was purchased from a distributor or repackager.	NA	NA
The listed substance was purchased from a mixture producer.	3.00	1.32

3.02 Circle all applicable modes of transportation used to deliver the listed substance to your facility.
CBI
[ ]

Truck 1
Railcar 2
Barge, Vessel 3
Pipeline 4
Plane 5
Other (specify) Parcel Post 6

[ ] Mark (X) this box if you attach a continuation sheet.

3.03 a. Circle all applicable containers used to transport the listed substance to your facility.

CBI

[ ]

Bags 1

Boxes 2

Free standing tank cylinders 3

Tank rail cars 4

Hopper cars 5

Tank trucks 6

Hopper trucks 7

Drums 8

Pipeline 9

Other (specify) @1 gallon can 10

b. If the listed substance is transported in pressurized tank cylinders, tank rail cars, or tank trucks, state the pressure of the tanks.

Tank cylinders ..... NA mmHg

Tank rail cars ..... NA mmHg

Tank trucks ..... NA mmHg

[ ] Mark (X) this box if you attach a continuation sheet.

PART B RAW MATERIAL IN THE FORM OF A MIXTURE

3.04 If you obtain the listed substance in the form of a mixture, list the trade name(s) of the mixture, the name of its supplier(s) or manufacturer(s), an estimate of the CBI average percent composition by weight of the listed substance in the mixture, and the amount of mixture processed during the reporting year.

[ ]

Trade Name	Supplier or Manufacturer	Average % Composition by Weight (specify ± % precision)	Amount Processed (kg/yr)
Solithane 113	Morton Thiokol	6-7 ± 1	47.67
NA	NA	NA	NA
NA	NA	NA	NA
NA	NA	NA	NA

[ ] Mark (X) this box if you attach a continuation sheet.

PART C RAW MATERIAL VOLUME

3.05 CBI [ ] State the quantity of the listed substance used as a raw material during the reporting year in the form of a class I chemical, class II chemical, or polymer, and the percent composition, by weight, of the listed substance.

	Quantity Used (kg/yr)	% Composition by Weight of Listed Substance in Raw Material (specify ± % precision)
Class I chemical	NA	NA
	NA	NA
	NA	NA
Class II chemical	47.67	6-7% ± 1
	NA	NA
	NA	NA
Polymer	NA	NA
	NA	NA
	NA	NA

[ ] Mark (X) this box if you attach a continuation sheet.

SECTION 4 PHYSICAL/CHEMICAL PROPERTIES

General Instructions:

If you are reporting on a mixture as defined in the glossary, reply to questions in Section 4 that are inappropriate to mixtures by stating "NA -- mixture."

For questions 4.06-4.15, if you possess any hazard warning statement, label, MSDS, or other notice that addresses the information requested, you may submit a copy or reasonable facsimile in lieu of answering those questions which it addresses.

PART A PHYSICAL/CHEMICAL DATA SUMMARY

4.01 Specify the percent purity for the three major[1] technical grade(s) of the listed substance as it is manufactured, imported, or processed. Measure the purity of the substance in the final product form for manufacturing activities, at the time you import the substance, or at the point you begin to process the substance.

CBI

[ ]

N/A--Mixture

	Manufacture	Import	Process
Technical grade #1	NA % purity	NA % purity	NA % purity
Technical grade #2	NA % purity	NA % purity	NA % purity
Technical grade #3	NA % purity	NA % purity	NA % purity

[1]Major = Greatest quantity of listed substance manufactured, imported or processed.

4.02 Submit your most recently updated Material Safety Data Sheet (MSDS) for the listed substance, and for every formulation containing the listed substance. If you possess an MSDS that you developed and an MSDS developed by a different source, submit your version. Indicate whether at least one MSDS has been submitted by circling the appropriate response.

Yes 1

No 2

Indicate whether the MSDS was developed by your company or by a different source.

Your company 1

Another source 2

[ ] Mark (X) this box if you attach a continuation sheet.

4.03 Submit a copy or reasonable facsimile of any hazard information (other than an MSDS) that is provided to your customers/users regarding the listed substance or any formulation containing the listed substance. Indicate whether this information has been submitted by circling the appropriate response.

Yes 1

No ..... (2)

4.04 For each activity that uses the listed substance, circle all the applicable number(s) corresponding to each physical state of the listed substance during the activity listed. Physical states for importing and processing activities are determined at the time you import or begin to process the listed substance. Physical states for manufacturing, storage, disposal and transport activities are determined using the final state of the product.

CBI

[ ]

Activity	Physical State				
	Solid	Slurry	Liquid	Liquified Gas	Gas
Manufacture	1	2	3	4	5
Import	1	2	3	4	5
Process	1	2	(3)	4	5
Store	1	2	3	4	5
Dispose	(1)	2	3	4	5
Transport	(1)	2	3	4	5

[ ] Mark (X) this box if you attach a continuation sheet.

4.05 Particle Size -- If the listed substance exists in particulate form during any of the following activities, indicate for each applicable physical state the size and the percentage distribution of the listed substance by activity. Do not include particles ≥10 microns in diameter. Measure the physical state and particle sizes for importing and processing activities at the time you import or begin to process the listed substance. Measure the physical state and particle sizes for manufacturing storage, disposal and transport activities using the final state of the product.

CBI

[ ]

N/A Mixture Liquid - solidified urethane

Physical State		Manufacture	Import	Process	Store	Dispose	Transport
Dust	<1 micron	NA	NA	NA	NA	NA	NA
	1 to <5 microns	NA	NA	NA	NA	NA	NA
	5 to <10 microns	NA	NA	NA	NA	NA	NA
Powder	<1 micron	NA	NA	NA	NA	NA	NA
	1 to <5 microns	NA	NA	NA	NA	NA	NA
	5 to <10 microns	NA	NA	NA	NA	NA	NA
Fiber	<1 micron	NA	NA	NA	NA	NA	NA
	1 to <5 microns	NA	NA	NA	NA	NA	NA
	5 to <10 microns	NA	NA	NA	NA	NA	NA
Aerosol	<1 micron	NA	NA	NA	NA	NA	NA
	1 to <5 microns	NA	NA	NA	NA	NA	NA
	5 to <10 microns	NA	NA	NA	NA	NA	NA

[ ] Mark (X) this box if you attach a continuation sheet.

4.15 Shipment Procedures -- If you use an inhibitor or stabilizer when shipping the listed substance in bulk form, specify its name, whether it inhibits or stabilizes the listed substance, the amount normally added, and the duration of its effectiveness.

CBI

[ ]

Name of Additive	Inhibitor or Stabilizer[1]	Amount Normally Added (ppm or %)	Duration of Effectiveness (specify units)
NA	NA	NA	NA
NA	NA	NA	NA
NA	NA	NA	NA

Indicate if hazard information/MSDS has been submitted in lieu of response by circling the appropriate response.

(Yes) ..... (1)

No 2

---

[1]Use the following codes to designate inhibitor and stabilizer:

I = Inhibitor
S = Stabilizer

[ ] Mark (X) this box if you attach a continuation sheet.

SECTION 5 ENVIRONMENTAL FATE

PART A RATE CONSTANTS AND TRANSFORMATION PRODUCTS

5.01 Indicate the rate constants for the following transformation processes.

a. Photolysis:

Absorption spectrum coefficient (peak) .... UK (1/M cm) at UK nm

Reaction quantum yield, ϕ ..... UK at UK nm

Direct photolysis rate constant, k_p, at ... UK 1/hr UK latitude

b. Oxidation constants at 25°C:

For $^1O_2$ (singlet oxygen), k_{ox} ..... UK 1/M hr

For RO_2 (peroxy radical), k_{ox} ..... UK 1/M hr

c. Five-day biochemical oxygen demand, BOD_5 ... UK mg/l

d. Biotransformation rate constant:

For bacterial transformation in water, k_b ... UK 1/hr

Specify culture ..... UK

e. Hydrolysis rate constants:

For base-promoted process, k_B ..... UK 1/M hr

For acid-promoted process, k_A ..... UK 1/M hr

For neutral process, k_N ..... UK 1/hr

f. Chemical reduction rate (specify conditions) UK

g. Other (such as spontaneous degradation) ... UK

[ ] Mark (X) this box if you attach a continuation sheet.

PART B PARTITION COEFFICIENTS

5.02 a. Specify the half-life of the listed substance in the following media.

Media	Half-life (specify units)
Groundwater	UK
Atmosphere	UK
Surface water	UK
Soil	UK

b. Identify the listed substance's known transformation products that have a half-life greater than 24 hours.

CAS No.	Name	Half-life (specify units)		Media
UK	UK	UK	in	UK
UK	UK	UK	in	UK
UK	UK	UK	in	UK
UK	UK	UK	in	UK

5.03 Specify the octanol-water partition coefficient, K_{ow} ... UK at 25°C

Method of calculation or determination ..... UK

5.04 Specify the soil-water partition coefficient, K_d ..... UK at 25°C

Soil type ..... UK

5.05 Specify the organic carbon-water partition coefficient, K_{oc} ..... UK at 25°C

5.06 Specify the Henry's Law Constant, H ..... UK atm-m^3/mole

[ ] Mark (X) this box if you attach a continuation sheet.

5.07 List the bioconcentration factor (BCF) of the listed substance, the species for which it was determined, and the type of test used in deriving the BCF.

Bioconcentration Factor	Species	Test[1]
UK	UK	UK
UK	UK	UK
UK	UK	UK

[1]Use the following codes to designate the type of test:

F = Flowthrough
S = Static

[ ] Mark (X) this box if you attach a continuation sheet.

SECTION 6 ECONOMIC AND FINANCIAL INFORMATION

6.01 Company Type -- Circle the number which most appropriately describes your company.

CBI

[ ]

Corporation ..... (1)

Sole proprietorship 2

Partnership 3

Other (specify) _____ 4

6.02 At the end of the reporting year, were you constructing additional facilities at this site that were not yet in operation at the end of the reporting year, but which are now being used or will be used in the future for manufacturing, importing, or processing the listed substance? Circle the appropriate response.

CBI

[ ]

Yes 1

(No) 2

6.03 List all of the product types that you manufacture that contain the listed substance as a raw material, and the percentage of the name-plate capacity dedicated to the listed substance that each product type represents. The total of all capacity percentiles should equal 100 percent. State the total name-plate capacity of the process type(s) used to manufacture all product types that contain the listed substance.

CBI

[ ]

Product Type	% Total Capacity
No Products contain listed substance	N/A

State the total name-plate capacity of the process type(s) used to manufacture all product types that contain the listed substance: N/A kg/yr

[ ] Mark (X) this box if you attach a continuation sheet.

6.04 For each market listed below, state the quantity sold and the total sales value of
CBI the listed substance sold or transferred in bulk during the reporting year.

[ ]

Market	Quantity Sold or Transferred (kg/yr)	Total Sales Value ($/yr)
Retail sales	NA	NA
Distribution -- Wholesalers	NA	NA
Distribution -- Retailers	NA	NA
Intra-company transfer	NA	NA
Repackagers	NA	NA
Mixture producers	NA	NA
Article producers	NA	NA
Other chemical manufacturers or processors	Less Than 1	Not Sold
Exporters	NA	NA
Other (specify)		
NA	NA	NA

6.05 Substitutes -- List all known commercially feasible substitutes that you know exist for the listed substance and state the cost of each substitute. A commercially feasible substitute is one which is economically and technologically feasible to use
CBI in your current operation, and which results in a final product with comparable performance in its end uses.

[ ]

N/A

Substitute	Cost ($/kg)
NA	NA
NA	NA
NA	NA

[ ] Mark (X) this box if you attach a continuation sheet.

7.02 In accordance with the instructions, provide a separate process block flow diagram showing each of the three major (greatest volume) process types involving the listed substance.

CBI

[ ] Process type ..... Spacecraft urethane coating mixture

[X] Mark (X) this box if you attach a continuation sheet.

7.03 In accordance with the instructions, provide a process block flow diagram showing all process emission streams and emission points that contain the listed substance and which, if combined, would total at least 90 percent of all facility emissions if not treated before emission into the environment. If all such emissions are released from one process type, provide a process block flow diagram using the instructions for question 7.01. If all such emissions are released from more than one process type, provide a process block flow diagram showing each process type as a separate block.

CBI

[ ] Process type ..... Spacecraft urethane coating mixture

☒ Mark (X) this box if you attach a continuation sheet.

7.04 Describe the typical equipment types for each unit operation identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

[ ] Process type ..... Urethane coating mixture

*measured pressure draw of pump

Unit Operation ID Number	Typical Equipment Type	Operating Temperature Range (°C)	Operating Pressure Range (mm Hg)	Vessel Composition
01	Bell Jar	10-30	559*	Glass
NA	NA	NA	NA	NA
NA	NA	NA	NA	NA
NA	NA	NA	NA	NA
NA	NA	NA	NA	NA
NA	NA	NA	NA	NA
NA	NA	NA	NA	NA
NA	NA	NA	NA	NA
NA	NA	NA	NA	NA
NA	NA	NA	NA	NA

[X] Mark (X) this box if you attach a continuation sheet.

7.05 Describe each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

[ ] Process type ..... Urethane coating mixture

* 6% Listed substance

Process Stream ID Code	Process Stream Description	Physical State[1]	Stream Flow (kg/yr)
A	urethane coating mixture	OL 100%urethane	47.6*
NA	NA	NA	NA
NA	NA	NA	NA
NA	NA	NA	NA
NA	NA	NA	NA
NA	NA	NA	NA
NA	NA	NA	NA
NA	NA	NA	NA

[1]Use the following codes to designate the physical state for each process stream:

GC = Gas (condensible at ambient temperature and pressure)
GU = Gas (uncondensible at ambient temperature and pressure)
SO = Solid
SY = Sludge or slurry
AL = Aqueous liquid
OL = Organic liquid
IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

[ ] Mark (X) this box if you attach a continuation sheet.

7.06 Characterize each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the CBI instructions for further explanation and an example.)

[ ] Process type ..... Urethane Spacecraft Coating Material

*Contains 6-7% Listed Substance.

a. Process Stream ID Code	b. Known Compounds[1]	c. Concentrations[2,3] (% or ppm)	d. Other Expected Compounds	e. Estimated Concentrations (% or ppm)
A	Solithane 113*	10-50 EW	N/A	NA
	Solithane 113-300	10-50 EW	NA	NA
	Additive Package	0- 80 EW	NA	NA
	NA	NA	NA	NA
	NA	NA	NA	NA
	NA	NA	NA	NA
	NA	NA	NA	NA
	NA	NA	NA	NA
	NA	NA	NA	NA
	NA	NA	NA	NA
	NA	NA	NA	NA
	NA	NA	NA	NA
	NA	NA	NA	NA

7.06 continued below

[ ] Mark (X) this box if you attach a continuation sheet.

7.06 (continued)

[1]For each additive package introduced into a process stream, specify the compounds that are present in each additive package, and the concentration of each component. Assign an additive package number to each additive package and list this number in column b. (Refer to the instructions for further explanation and an example. Refer to the glossary for the definition of additive package.)

Additive Package Number	Components of Additive Package	Concentrations (% or ppm)		
1	Silicon Dioxide	8.0	EW	%
	Dibutyltindilaurate	1.0	EW	%
	Aminocoumarin	.3	EW	%
	Blue epoxy dispersion	.7	EW	%
2	Dibutyltindilaurate	.25	EW	%
	Carbon	1.0	EW	%
3	Dibutyltindilaurate	1.0	EW	%
	Toluene	18	EW	%
	1,1,1nitrilotri 2 propanol	1.2	EW	%
	Aluminum oxide	40	EW	%
4				
	Aluminum oxide	38%	EW	%

[2]Use the following codes to designate how the concentration was determined:

A = Analytical result
E = Engineering judgement/calculation

[3]Use the following codes to designate how the concentration was measured:

V = Volume
W = Weight

[ ] Mark (X) this box if you attach a continuation sheet.

SECTION 8 RESIDUAL TREATMENT GENERATION, CHARACTERIZATION, TRANSPORTATION, AND MANAGEMENT

General Instructions:

For questions 8.04-8.06, provide a separate response for each residual treatment block flow diagram provided in question 8.01, 8.02 or 8.03. Identify the process type from which the information is extracted.

For questions 8.05-8.33, the Stream Identification Codes are those process streams listed in either the Section 7 or Section 8 block flow diagrams which contain residuals for each applicable waste management method.

For questions 8.07-8.33, if residuals are combined before they are handled, list those Stream Identification Codes on the same line.

Questions 8.09-8.33 refer to the waste management activities involving the residuals identified in either the Section 7 or Section 8 block flow diagrams. Not all Stream Identification Codes used in the sample answers (e.g., for the incinerator questions) have corresponding process streams identified in the block flow diagram(s). These Stream Identification codes are for illustrative purposes only.

For questions 8.11-8.33, if you have provided the information requested on one of the EPA Office of Solid Waste surveys listed below within the three years prior to your reporting year, you may submit a copy or reasonable facsimile in lieu of answering those questions which the survey addresses. The applicable surveys are: (1) Hazardous Waste Treatment, Storage, Disposal, and Recycling Survey; (2) Hazardous Waste Generator Survey; or (3) Subtitle D Industrial Facility Mail Survey.

[ ] Mark (X) this box if you attach a continuation sheet.

PART A RESIDUAL TREATMENT PROCESS DESCRIPTION

8.01 In accordance with the instructions, provide a residual treatment block flow diagram which describes the treatment process used for residuals identified in question 7.01.

CBI

[ ] Process type ..... Spacecraft urethane coating mixture

[X] Mark (X) this box if you attach a continuation sheet.

8.04 Describe the typical equipment types for each unit operation identified in your residual treatment block flow diagram(s). If a residual treatment block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

[ ] No on-site treatment of residual materials generated in this process

[ ] Process type ..... _____

Unit Operation ID Number (as assigned in questions 8.01, 8.02, or 8.03)	Typical Equipment Type
NA	NA
NA	NA
NA	NA
NA	NA
NA	NA
NA	NA
NA	NA
NA	NA
NA	NA
NA	NA
NA	NA

[ ] Mark (X) this box if you attach a continuation sheet.

PART B RESIDUAL GENERATION AND CHARACTERIZATION

8.05 Characterize each process stream identified in your residual treatment block flow diagram(s). If a residual treatment block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the instructions for further explanation and an example.)

CBI

[ ] Process type ..... Spacecraft urethane coating mixture

*contains 6-7% of the listed substance

a. Stream ID Code	b. Type of Hazardous Waste[1]	c. Physical State of Residual[2]	d. Known Compounds[3]	e. Concentrations (% or ppm)[4,5,6]	f. Other Expected Compounds	g. Estimated Concentrations (% or ppm)
aa	E	Liquid	Solithane*	10-50 EW	NA	NA
		Liquid	s113-300 ricinus oil	10-50 EW	NA	NA
		Liquid	Additives	0-80	NA	NA
		NA	NA	NA	NA	NA
bb	NON	Solid	Urethane	100%	NA	NA
		NA	NA	NA	NA	NA
		NA	NA	NA	NA	NA
		NA	NA	NA	NA	NA
		NA	NA	NA	NA	NA
		NA	NA	NA	NA	NA
		NA	NA	NA	NA	NA
		NA	NA	NA	NA	NA
		NA	NA	NA	NA	NA
		NA	NA	NA	NA	NA
		NA	NA	NA	NA	NA
		NA	NA	NA	NA	NA
		NA	NA	NA	NA	NA

8.05 continued below

[ ] Mark (X) this box if you attach a continuation sheet.

8.05 (continued)

[1]Use the following codes to designate the type of hazardous waste:

I = Ignitable
C = Corrosive
R = Reactive
E = EP toxic
T = Toxic
H = Acutely hazardous

[2]Use the following codes to designate the physical state of the residual:

GC = Gas (condensible at ambient temperature and pressure)
GU = Gas (uncondensible at ambient temperature and pressure)
SO = Solid
SY = Sludge or slurry
AL = Aqueous liquid
OL = Organic liquid
IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

8.05 continued below

[ ] Mark (X) this box if you attach a continuation sheet.

(continued)

8.05

[1]For each additive package introduced into a process stream, specify the compounds that are present in each additive package, and the concentration of each component. Assign an additive package number to each additive package and list this number in column b. (Refer to the instructions for further explanation and an example. Refer to the glossary for the definition of additive package.)

Additive Package Number	Components of Additive Package	Concentrations (% or ppm)
1	Silicon Dioxide	8.0 EW %
	Dibutyltindilaurate	1.0 EW %
	Aminocoumarin	.3 EW %
	Blue epoxy dispersion	.7 EW %
2	Dibutyltindilaurate	.25 EW %
	Carbon	1.0 EW %
3	Dibutyltindilaurate	1.0 EW %
	Toluene	18 EW %
	1,1,1nitrilotri 2 propanol	1.2 EW %
	Aluminum oxide	40 EW %
4		
	Aluminum oxide	38% EW %

[2]Use the following codes to designate how the concentration was determined:

A = Analytical result
E = Engineering judgement/calculation

[3]Use the following codes to designate how the concentration was measured:

V = Volume
W = Weight

[ ] Mark (X) this box if you attach a continuation sheet.

8.05 (continued)

[5]Use the following codes to designate how the concentration was measured:

V = Volume
W = Weight

[6]Specify the analytical test methods used and their detection limits in the table below. Assign a code to each test method used and list those codes in column e.

NA

Code	Method	Detection Limit (± ug/l)
1	NA	NA
2	NA	NA
3	NA	NA
4	NA	NA
5	NA	NA
6	NA	NA

[ ] Mark (X) this box if you attach a continuation sheet.

PART B RESIDUAL GENERATION AND CHARACTERIZATION

8.06 Characterize each process stream identified in your residual treatment block flow diagram(s). If a residual treatment block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the instructions for further explanation and an example.)

CBI

[ ] Process type ..... Spacecraft urethane coating mixture

*contains 6-7% of the listed substance

a. Stream ID Code	b. Type of Hazardous Waste[1]	c. Physical State of Residual[2]	d. Known Compounds[3]	e. Concentrations (% or ppm)[4,5,6]	f. Other Expected Compounds	g. Estimated Concentrations (% or ppm)
aa	E	Liquid	Solithane*	% 10-50 EW	NA	NA
		Liquid	s113-300 ricinus oil	% 10-50 EW	NA	NA
		Liquid	Additives	% 0-80	NA	NA
bb	NON	Solid	Urethane	100%	NA	NA
		NA	NA	NA	NA	NA
		NA	NA	NA	NA	NA
		NA	NA	NA	NA	NA
		NA	NA	NA	NA	NA
		NA	NA	NA	NA	NA
		NA	NA	NA	NA	NA
		NA	NA	NA	NA	NA
		NA	NA	NA	NA	NA
		NA	NA	NA	NA	NA
		NA	NA	NA	NA	NA
		NA	NA	NA	NA	NA

8.06

[ ] Mark (X) this box if you attach a continuation sheet.

8.22 Describe the combustion chamber design parameters for each of the three largest (by capacity) incinerators that are used on-site to burn the residuals identified in your process block or residual treatment block flow diagram(s).

CBI

[ ]

Incinerator	Combustion Chamber Temperature (°C)		Location of Temperature Monitor		Residence Time In Combustion Chamber (seconds)	
	Primary	Secondary	Primary	Secondary	Primary	Secondary
1	NA	NA	NA	NA	NA	NA
2	NA	NA	NA	NA	NA	NA
3	NA	NA	NA	NA	NA	NA

Indicate if Office of Solid Waste survey has been submitted in lieu of response by circling the appropriate response.

Yes 1

(No) 2

8.23 Complete the following table for the three largest (by capacity) incinerators that are used on-site to burn the residuals identified in your process block or residual treatment block flow diagram(s).

CBI

[ ]

Incinerator	Air Pollution Control Device[1]	Types of Emissions Data Available
1	NA	NA
2	NA	NA
3	NA	NA

Indicate if Office of Solid Waste survey has been submitted in lieu of response by circling the appropriate response.

Yes 1

(No) 2

[1]Use the following codes to designate the air pollution control device:

S = Scrubber (include type of scrubber in parenthesis)
E = Electrostatic precipitator
O = Other (specify) _____

[ ] Mark (X) this box if you attach a continuation sheet.

8.24 Stack Parameters -- Provide the following information on stack parameters for the three largest (by capacity) incinerators that are used on-site to burn the residuals identified in your process block or residual treatment block flow diagram(s).

CBI Photocopy this question and complete it separately for each incinerator.

[ ] Incinerator number ..... NA

Stack height	NA	m
Stack inner diameter (at outlet)	NA	m
Exhaust temperature	NA	°C
Vertical or horizontal stack	NA	(V or H)
Annual emissions for the listed substance	NA	kg/yr
Height of attached or adjacent building	NA	m
Width of attached or adjacent building	NA	m
Building cross-sectional area	NA	m^2
Emission exit velocity	NA	m/sec
Average emission rate of exit stream	NA	kg/min
Maximum emission rate of exit stream	NA	kg/min
Average duration of maximum emission rate of exit stream .	NA	min
Frequency of maximum emission rate of exit stream	NA	times/year

Indicate if Office of Solid Waste survey has been submitted in lieu of response by circling the appropriate response.

Yes 1

(No) 2

[ ] Mark (X) this box if you attach a continuation sheet.

PART A EMPLOYMENT AND POTENTIAL EXPOSURE PROFILE

9.01 Mark (X) the appropriate column to indicate whether your company maintains records on the following data elements for hourly and salaried workers. Specify for each data element the year in which you began maintaining records and the number of years the records for that data element are maintained. (Refer to the instructions for further explanation and an example.)

CBI

[ ]

Data Element	Data are Maintained for: Hourly Workers	Data are Maintained for: Salaried Workers	Year in Which Data Collection Began	Number of Years Records Are Maintained
Date of hire	X	X	1957	Medical indef Personnel 10
Age at hire	X	X	"	"
Work history of individual before employment at your facility	X	X	"	"
Sex	X	X	"	"
Race	X	X	"	"
Job titles	X	X	"	"
Start date for each job title	X	X	"	"
End date for each job title	X	X	"	"
Work area industrial hygiene monitoring data	X	X	1985	Indefinetly
Personal employee monitoring data	X	X	1985	"
Employee medical history	X	X	1957	"
Employee smoking history	X	X	1957	"
Accident history	X	X	1957	"
Retirement date	X	X	1957	"
Termination date	X	X	1957	"
Vital status of retirees	NA	NA	NA	NA
Cause of death data	NA	NA	NA	NA

[ ] Mark (X) this box if you attach a continuation sheet.

9.02 In accordance with the instructions, complete the following table for each activity in which you engage.

CBI

[ ]

a. Activity	b. Process Category	c. Yearly Quantity (kg)	d. Total Workers	e. Total Worker-Hours
Manufacture of the listed substance	Enclosed	NA	NA	NA
	Controlled Release	NA	NA	NA
	Open	NA	NA	NA
On-site use as reactant	Enclosed	NA	NA	NA
	Controlled Release	3.0	90	@750
	Open	NA	NA	NA
On-site use as nonreactant	Enclosed	NA	NA	NA
	Controlled Release	NA	NA	NA
	Open	NA	NA	NA
On-site preparation of products	Enclosed	NA	NA	NA
	Controlled Release	NA	NA	NA
	Open	NA	NA	NA

[ ] Mark (X) this box if you attach a continuation sheet.

9.03 Provide a descriptive job title for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance.

CBI

[ ]

Labor Category	Descriptive Job Title
A	Mix Lab technician
B	clean room technician
C	coating and bonding technician
D	NA
E	NA
F	NA
G	NA
H	NA
I	NA
J	NA

[ ] Mark (X) this box if you attach a continuation sheet.

9.04 In accordance with the instructions, provide your process block flow diagram(s) and indicate associated work areas.

CBI

[ ] Process type ..... Spacecraft urethane coating mixture

Note this is exclusively a batch operation

☒ Mark (X) this box if you attach a continuation sheet.

9.05 Describe the various work area(s) shown in question 9.04 that encompass workers who may potentially come in contact with or be exposed to the listed substance. Add any additional areas not shown in the process block flow diagram in question 7.01 or 7.02. Photocopy this question and complete it separately for each process type.

CBI

[ ] Process type ..... Spacecraft urethane coating mixture

Work Area ID	Description of Work Areas and Worker Activities
1	Mix Lab
2	Controlled clean room
3	NA
4	NA
5	NA
6	NA
7	NA
8	NA
9	NA
10	NA

[ ] Mark (X) this box if you attach a continuation sheet.

9.06 Complete the following table for each work area identified in question 9.05, and for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

[ ] Process type ..... Spacecraft urethane coating mixture

Work area ..... Mix Lab-Controlled clean area

*potential exposure to listed substance

Labor Category	Number of Workers Exposed	Mode of Exposure (e.g., direct skin contact)	Physical State of Listed Substance[1]	Average Length of Exposure Per Day[2]	Number of Days per Year Exposed
1	1	Skin* Air	OL	B	250
2	90	skin Air	OL	A	250
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA

[1]Use the following codes to designate the physical state of the listed substance at the point of exposure:

GC = Gas (condensible at ambient temperature and pressure)
GU = Gas (uncondensible at ambient temperature and pressure; includes fumes, vapors, etc.)
SO = Solid
SY = Sludge or slurry
AL = Aqueous liquid
OL = Organic liquid
IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

[2]Use the following codes to designate average length of exposure per day:

A = 15 minutes or less
B = Greater than 15 minutes, but not exceeding 1 hour
C = Greater than one hour, but not exceeding 2 hours
D = Greater than 2 hours, but not exceeding 4 hours
E = Greater than 4 hours, but not exceeding 8 hours
F = Greater than 8 hours

[ ] Mark (X) this box if you attach a continuation sheet.

9.07 For each labor category represented in question 9.06, indicate the 8-hour Time Weighted Average (TWA) exposure levels and the 15-minute peak exposure levels. Photocopy this question and complete it separately for each process type and work area.

CBI

[ ] Process type ..... Spacecraft Urethane Coating mixture

Work area ..... Mix Lab/controlled clean room

Labor Category	8-hour TWA Exposure Level (ppm, mg/m^3, other-specify)	15-Minute Peak Exposure Level (ppm, mg/m^3, other-specify)
1	UK/	UK/
2	UK/	UK/
NA	NA	NA
NA	NA	NA
NA	NA	NA
NA	NA	NA
NA	NA	NA
NA	NA	NA
NA	NA	NA
NA	NA	NA

[ ] Mark (X) this box if you attach a continuation sheet.

PART B WORK PLACE MONITORING PROGRAM

9.08 If you monitor worker exposure to the listed substance, complete the following table.

CBI

[ ]

NA No monitoring data available

Sample/Test	Work Area ID	Testing Frequency (per year)	Number of Samples (per test)	Who Samples[1]	Analyzed In-House (Y/N)	Number of Years Records Maintained
Personal breathing zone	NA	NA	NA	NA	NA	NA
General work area (air)	NA	NA	NA	NA	NA	NA
Wipe samples	NA	NA	NA	NA	NA	NA
Adhesive patches	NA	NA	NA	NA	NA	NA
Blood samples	NA	NA	NA	NA	NA	NA
Urine samples	NA	NA	NA	NA	NA	NA
Respiratory samples	NA	NA	NA	NA	NA	NA
Allergy tests	NA	NA	NA	NA	NA	NA
Other (specify) _____	NA	NA	NA	NA	NA	NA
Other (specify) _____	NA	NA	NA	NA	NA	NA
Other (specify) _____	NA	NA	NA	NA	NA	NA

[1]Use the following codes to designate who takes the monitoring samples:

A = Plant industrial hygienist
B = Insurance carrier
C = OSHA consultant
D = Other (specify) _____

[ ] Mark (X) this box if you attach a continuation sheet.

9.09 For each sample type identified in question 9.08, describe the type of sampling and analytical methodology used for each type of sample.

CBI

[ ]	Sample Type	Sampling and Analytical Methodology
	NA no monitoring data available for this substance at this time	
	NA	NA
	NA	NA
	NA	NA
	NA	NA
	NA	NA

9.10 If you conduct personal and/or ambient air monitoring for the listed substance, specify the following information for each equipment type used.

CBI

[ ]	Equipment Type[1]	Detection Limit[2]	Manufacturer	Averaging Time (hr)	Model Number
	NA	NA	NA	NA	NA
	NA	NA	NA	NA	NA
	NA	NA	NA	NA	NA
	NA	NA	NA	NA	NA
	NA	NA	NA	NA	NA

[1]Use the following codes to designate personal air monitoring equipment types:

A = Passive dosimeter
B = Detector tube
C = Charcoal filtration tube with pump
D = Other (specify) NA

Use the following codes to designate ambient air monitoring equipment types:

E = Stationary monitors located within work area
F = Stationary monitors located within facility
G = Stationary monitors located at plant boundary
H = Mobile monitoring equipment (specify) NA
I = Other (specify) _____

[2]Use the following codes to designate detection limit units:

A = ppm
B = Fibers/cubic centimeter (f/cc)
C = Micrograms/cubic meter ($\mu g/m^3$)

[ ] Mark (X) this box if you attach a continuation sheet.

9.11 If you conduct routine medical tests for monitoring the health effects of exposure to the listed substance, specify the type and frequency of the tests.

CBI NA no monitoring data available at this time

[ ]	Test Description	Frequency (weekly, monthly, yearly, etc.)
	NA	NA
	NA	NA
	NA	NA
	NA	NA
	NA	NA

[ ] Mark (X) this box if you attach a continuation sheet.

PART C ENGINEERING CONTROLS

9.12 Describe the engineering controls that you use to reduce or eliminate worker exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

NA NO monitoring data available at this time

[ ] Process type ..... _____

Work area ..... _____

Engineering Controls	Used (Y/N)	Year Installed	Upgraded (Y/N)	Year Upgraded
Ventilation:				
Local exhaust	NA	NA	NA	NA
General dilution	NA	NA	NA	NA
Other (specify) _____	NA	NA	NA	NA
Vessel emission controls	NA	NA	NA	NA
Mechanical loading or packaging equipment	NA	NA	NA	NA
Other (specify) _____	NA	NA	NA	NA

[ ] Mark (X) this box if you attach a continuation sheet.

PART D PERSONAL PROTECTIVE AND SAFETY EQUIPMENT

9.14 Describe the personal protective and safety equipment that your workers wear or use in each work area in order to reduce or eliminate their exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

[ ] Process type ..... Spacecraft urethane coating mixture

Work area ..... Mix Lab-controlled clean room

Equipment Types	Wear or Use (Y/N)
Respirators	
Safety goggles/glasses	Y
Face shields	
Coveralls	
Bib aprons	
Chemical-resistant gloves	Y
Other (specify)	

[ ] Mark (X) this box if you attach a continuation sheet.

9.13 **Describe all equipment or process modifications you have made within the 3 years prior to the reporting year that have resulted in a reduction of worker exposure to the listed substance. For each equipment or process modification described, state the percentage reduction in exposure that resulted. Photocopy this question and complete it separately for each process type and work area.**

CBI

No Process changes have been made in these areas

[ ] **Process type** ..... NA

Work area ..... NA

Equipment or Process Modification	Reduction in Worker Exposure Per Year (%)
NA	NA
NA	NA
NA	NA
NA	NA

[ ] **Mark (X) this box if you attach a continuation sheet.**

PART E WORK PRACTICES

9.19 Describe all of the work practices and administrative controls used to reduce or eliminate worker exposure to the listed substance (e.g., restrict entrance only to authorized workers, mark areas with warning signs, insure worker detection and monitoring practices, provide worker training programs, etc.). Photocopy this CBI question and complete it separately for each process type and work area.

[ ]

Process type ..... Spacecraft urethane coating mixture

Work area .....

Employee training - Chemical training. Methods designed to eliminate and minimize any potential exposure - the listed substance is only used in very small quantities.

9.20 Indicate (X) how often you perform each housekeeping task used to clean up routine leaks or spills of the listed substance. Photocopy this question and complete it separately for each process type and work area.

Process type ..... Spacecraft urethane coating mixture

Work area . Due to extremely small quantities and methods there are no routine spills of these materials containing the listed substance

Housekeeping Tasks	Less Than Once Per Day	1-2 Times Per Day	3-4 Times Per Day	More Than 4 Times Per Day
Sweeping	NA	NA	NA	NA
Vacuuming	NA	NA	NA	NA
Water flushing of floors	NA	NA	NA	NA
Other (specify) Clean immediately at the time of any spill				

[ ] Mark (X) this box if you attach a continuation sheet.

9.21 Do you have a written medical action plan for responding to routine or emergency exposure to the listed substance?

Routine exposure

(Yes) Part of our standard medical treatment plan ..... (1)

No 2

Emergency exposure

(Yes) Part of our Emergency Medical Response ..... (1)

No 2

If yes, where are copies of the plan maintained?

Routine exposure: Health office

Emergency exposure: Health office

9.22 Do you have a written leak and spill cleanup plan that addresses the listed substance? Circle the appropriate response.

(Yes) ..... (1)

No 2

If yes, where are copies of the plan maintained? Safety/ Plant Engineering

Has this plan been coordinated with state or local government response organizations? Circle the appropriate response.

(Yes) ..... (1)

No 2

9.23 Who is responsible for monitoring worker safety at your facility? Circle the appropriate response.

Plant safety specialist ..Livia Pontani..... (1)

Insurance carrier ..... NA 2

OSHA consultant 3

Other (specify) _____ 4

[ ] Mark (X) this box if you attach a continuation sheet.

9.24 Who is responsible for safety and health training at your facility? Circle the appropriate response.

Plant safety specialist ..... (1)

Insurance carrier 2

OSHA consultant 3

Other (specify) _____ 4

9.25 Who is responsible for the medical program at your facility? Circle the appropriate response.

Plant physician 1

Consulting physician ..... (2)

Plant nurse 3

Consulting nurse 4

Other (specify) Plant safety director 5

[ ] Mark (X) this box if you attach a continuation sheet.

SECTION 10 ENVIRONMENTAL RELEASE

General Instructions:

Complete Part E (questions 10.23-10.35) for each non-routine release involving the listed substance that occurred during the reporting year. Report on all releases that are equal to or greater than the listed substance's reportable quantity value, RQ, unless the release is federally permitted as defined in 42 U.S.C. 9601, or is specifically excluded under the definition of release as defined in 40 CFR 302.3(22). Reportable quantities are codified in 40 CFR Part 302. If the listed substance is not a hazardous substance under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and, thus, does not have an RQ, then report releases that exceed 2,270 kg. If such a substance however, is designated as a CERCLA hazardous substance, then report those releases that are equal to or greater than the RQ. The facility may have answered these questions or similar questions under the Agency's Accidental Release Information Program and may already have this information readily available. Assign a number to each release and use this number throughout this part to identify the release. Releases over more than a 24-hour period are not single releases, i.e., the release of a chemical substance equal to or greater than an RQ must be reported as a separate release for each 24-hour period the release exceeds the RQ.

For questions 10.25-10.35, answer the questions for each release identified in question 10.23.. Photocopy these questions and complete them separately for each release.

PART A GENERAL INFORMATION

10.01 Where is your facility located? Circle all appropriate responses.

CBI

[ ] Industrial area ..... (1)

Urban area 2

Residential area 3

Agricultural area 4

Rural area ..... (5)

Adjacent to a park or a recreational area 6

Within 1 mile of a navigable waterway ..... (7)

Within 1 mile of a school, university, hospital, or nursing home facility 8

Within 1 mile of a non-navigable waterway 9

Other (specify) _____ 10

[ ] Mark (X) this box if you attach a continuation sheet.

10.02 Specify the exact location of your facility (from central point where process unit is located) in terms of latitude and longitude or Universal Transverse Mercader (UTM) coordinates.

Latitude ..... 74 ° 33 ' 38 "

Longitude ..... 40 ° 17 ' 28 "

UTM coordinates ..... Zone _____, Northing _____, Easting _____

10.03 If you monitor meteorological conditions in the vicinity of your facility, provide the following information. Not Known

Average annual precipitation ..... _____ inches/year

Predominant wind direction ..... _____

10.04 Indicate the depth to groundwater below your facility.

Depth to groundwater ..... 10 meters

10.05 For each on-site activity listed, indicate (Y/N/NA) all routine releases of the listed substance to the environment. (Refer to the instructions for a definition of Y, N, and NA.)

CBI

[ ]

On-Site Activity	Environmental Release		
	Air	Water	Land
Manufacturing	NA	NA	NA
Importing	NA	NA	NA
Processing	Y	NA	NA
Otherwise used	NA	NA	NA
Product or residual storage	NA	NA	NA
Disposal	NA	NA	NA
Transport	NA	NA	NA

[ ] Mark (X) this box if you attach a continuation sheet.

10.06 Provide the following information for the listed substance and specify the level of precision for each item. (Refer to the instructions for further explanation and an example.)

CBI

[ ]

Quantity discharged to the air	NA	kg/yr ± NA	%
Quantity discharged in wastewaters	NA	kg/yr ± NA	%
Quantity managed as other waste in on-site treatment, storage, or disposal units	Less than 1	kg/yr ± .5	%
Quantity managed as other waste in off-site treatment, storage, or disposal units	Less than 1	kg/yr ± .5	%

No off-site storage owned or operated by this facility

[ ] Mark (X) this box if you attach a continuation sheet.

10.07 Complete the following table for each process stream containing the listed substance as identified in your process block or residual treatment block flow diagram(s). Photocopy this question and complete it separately for each process type.

CBI

[ ]

Process type ..... Spacecraft urethane coating mixture

Process Stream ID Code	Media Affected[1]	Average Amount of Listed Substance Released[2]	Number of Batches/Year	Days of Operation/ Year
NA	NA	NA	NA	NA
	NA	NA	NA	NA
	NA	NA	NA	NA

Any generated residual containing the listed substane is sent off-site thru contractors for incineration Quantities less than 1 kg

[1]Use the following codes to designate the media affected:

A = Air
B = Land
C = Groundwater
D = POTW
E = Navigable waterway
F = Non-navigable waterway
G = Other (specify) _____

[2]Specify the average amount of listed substance released to the environment and use the following codes to designate the units used to measure the release:

A = kg/day
B = kg/batch

[ ] Mark (X) this box if you attach a continuation sheet.

10.08 Describe the control technologies used to minimize release of the listed substance for each process stream containing the listed substance as identified in your process block or residual treatment block flow diagram(s). Photocopy this question and complete it separately for each process type.

CBI

[ ] Process type ..... Spacecraft urethane coating mixture

No control technologies are used

Stream ID Code	Control Technology	Percent Efficiency
01	NA	NA
NA	NA	NA
NA	NA	NA
NA	NA	NA
NA	NA	NA
NA	NA	NA
NA	NA	NA
NA	NA	NA
NA	NA	NA
NA	NA	NA

[ ] Mark (X) this box if you attach a continuation sheet.

PART B RELEASE TO AIR

10.09 Point Source Emissions -- Identify each emission point source containing the listed substance in terms of a Stream ID Code as identified in your process block or residual treatment block flow diagram(s), and provide a description of each point source. Do not include raw material and product storage vents, or fugitive emission sources (e.g., equipment leaks). Photocopy this question and complete it separately for each process type.

CBI
[ ]

Process type ..... Spacecraft urethane coating mixture

Point Source ID Code	Description of Emission Point Source
01	Bell Jar
NA	NA
NA	NA
NA	NA
NA	NA
NA	NA
NA	NA
NA	NA
NA	NA
NA	NA

[ ] Mark (X) this box if you attach a continuation sheet.

10.10 Emission Characteristics - - Characterize the emissions for each Point Source ID Code identified in question 10.09 by completing the following table.

CBI

[ ]

Point Source ID Code	Physical State[1]	Average Emissions (kg/day)	Frequency[2] (days/yr)	Duration[3] (min/day)	Average Emission Factor[4]	Maximum Emission Rate (kg/min)	Maximum Emission Rate Frequency (events/yr)	Maximum Emission Rate Duration (min/event)
01	V	UK	250	15	UK	UK	UK	UK

[1]Use the following codes to designate physical state at the point of release:
G = Gas; V = Vapor; P = Particulate; A = Aerosol; O = Other (specify) _____

[2]Frequency of emission at any level of emission

[3]Duration of emission at any level of emission

[4]Average Emission Factor — Provide estimated (± 25 percent) emission factor (kg of emission per kg of production of listed substance)

[ ] Mark (X) this box if you attach a continuation sheet.

10.11 Stack Parameters -- Identify the stack parameters for each Point Source ID Code identified in question 10.09 by completing the following table.

CBI

[ ]

Point Source ID Code	Stack Height(m)	Stack Inner Diameter (at outlet) (m)	Exhaust Temperature (°C)	Emission Exit Velocity (m/sec)	Building Height(m)[1]	Building Width(m)[2]	Vent Type[3]
01	4.2	.3	22	.12	4.5	125	H
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA

[1]Height of attached or adjacent building

[2]Width of attached or adjacent building

[3]Use the following codes to designate vent type:

H = Horizontal
V = Vertical

[ ] Mark (X) this box if you attach a continuation sheet.

10.12 If the listed substance is emitted in particulate form, indicate the particle size distribution for each Point Source ID Code identified in question 10.09. Photocopy this question and complete it separately for each emission point source.

CBI

[ ] Point source ID code ..... NA

Size Range (microns)	Mass Fraction (% ± % precision)
< 1	NA
≥ 1 to < 10	NA
≥ 10 to < 30	NA
≥ 30 to < 50	NA
≥ 50 to < 100	NA
≥ 100 to < 500	NA
≥ 500	NA
	Total = 100%

[ ] Mark (X) this box if you attach a continuation sheet.

PART C FUGITIVE EMISSIONS

10.13 Equipment Leaks -- Complete the following table by providing the number of equipment types listed which are exposed to the listed substance and which are in service according to the specified weight percent of the listed substance passing through the component. Do this for each process type identified in your process block or residual treatment block flow diagram(s). Do not include equipment types that are not exposed to the listed substance. If this is a batch or intermittently operated process, give an overall percentage of time per year that the process type is exposed to the listed substance. Photocopy this question and complete it separately for each process type.

CBI

[ ] Process type ..... Spacecraft urethane coating mixture

Percentage of time per year that the listed substance is exposed to this process type ..... 1.0 %

Equipment Type	Number of Components in Service by Weight Percent of Listed Substance in Process Stream					
	Less than 5%	5-10%	11-25%	26-75%	76-99%	Greater than 99%
Pump seals[1]						
Packed	NA	NA	NA	NA	NA	NA
Mechanical	X	NA	NA	NA	NA	NA
Double mechanical[2]	NA	NA	NA	NA	NA	NA
Compressor seals[1]	NA	NA	NA	NA	NA	NA
Flanges	NA	NA	NA	NA	NA	NA
Valves						
Gas[3]	NA	NA	NA	NA	NA	NA
Liquid	NA	NA	NA	NA	NA	NA
Pressure relief devices[4] (Gas or vapor only)	NA	NA	NA	NA	NA	NA
Sample connections						
Gas	NA	NA	NA	NA	NA	NA
Liquid	NA	NA	NA	NA	NA	NA
Open-ended lines[5] (e.g., purge, vent)						
Gas	NA	NA	NA	NA	NA	NA
Liquid	NA	NA	NA	NA	NA	NA

[1] List the number of pump and compressor seals, rather than the number of pumps or compressors

10.13 continued on next page

[ ] Mark (X) this box if you attach a continuation sheet.

10.13 (continued)

[2]If double mechanical seals are operated with the barrier (B) fluid at a pressure greater than the pump stuffing box pressure and/or equipped with a sensor (S) that will detect failure of the seal system, the barrier fluid system, or both, indicate with a "B" and/or an "S", respectively

[3]Conditions existing in the valve during normal operation

[4]Report all pressure relief devices in service, including those equipped with control devices

[5]Lines closed during normal operation that would be used during maintenance operations

10.14 Pressure Relief Devices with Controls -- Complete the following table for those pressure relief devices identified in 10.13 to indicate which pressure relief devices in service are controlled. If a pressure relief device is not controlled, enter "None" under column c.

CBI

[ ]

NA

a. Number of Pressure Relief Devices	b. Percent Chemical in Vessel[1]	c. Control Device	d. Estimated Control Efficiency[2]
NA	NA	NA	NA
NA	NA	NA	NA
NA	NA	NA	NA
NA	NA	NA	NA
NA	NA	NA	NA
NA	NA	NA	NA
NA	NA	NA	NA
NA	NA	NA	NA
NA	NA	NA	NA

[1]Refer to the table in question 10.13 and record the percent range given under the heading entitled "Number of Components in Service by Weight Percent of Listed Substance" (e.g., <5%, 5-10%, 11-25%, etc.)

[2]The EPA assigns a control efficiency of 100 percent for equipment leaks controlled with rupture discs under normal operating conditions. The EPA assigns a control efficiency of 98 percent for emissions routed to a flare under normal operating conditions

[ ] Mark (X) this box if you attach a continuation sheet.

10.15 Equipment Leak Detection -- If a formal leak detection and repair program is in place, complete the following table regarding those leak detection and repair procedures. Photocopy this question and complete it separately for each process type.

CBI

[ ] Process type ..... _____

Equipment Type	Leak Detection Concentration (ppm or mg/m^3) Measured at ___ Inches from Source	Detection Device[1]	Frequency of Leak Detection (per year)	Repairs Initiated (days after detection)	Repairs Completed (days after initiated)
Pump seals					
Packed	NA	NA	NA	NA	NA
Mechanical	NA	NA	NA	NA	NA
Double mechanical	NA	NA	NA	NA	NA
Compressor seals	NA	NA	NA	NA	NA
Flanges	NA	NA	NA	NA	NA
Valves					
Gas	NA	NA	NA	NA	NA
Liquid	NA	NA	NA	NA	NA
Pressure relief devices (gas or vapor only)	NA	NA	NA	NA	NA
Sample connections					
Gas	NA	NA	NA	NA	NA
Liquid	NA	NA	NA	NA	NA
Open-ended lines					
Gas	NA	NA	NA	NA	NA
Liquid	NA	NA	NA	NA	NA

[1]Use the following codes to designate detection device:

POVA = Portable organic vapor analyzer
FPM = Fixed point monitoring
O = Other (specify) _____

[ ] Mark (X) this box if you attach a continuation sheet.

10.16 Raw Material, Intermediate and Product Storage Emissions - - Complete the following table by providing the information on each liquid raw material, intermediate, and product storage vessel containing the listed substance as identified in your process block or residual treatment block flow diagram(s).

CBI

[ ]

Vessel Type[1]	Floating Roof Seals[2]	Composition of Stored Materials[3]	Throughput (liters per year)	Vessel Filling Rate (gpm)	Vessel Filling Duration (min)	Vessel Inner Diameter (m)	Vessel Height (m)	Operating Vessel Volume (l)	Vessel Emission Controls[4]	Design Flow Rate[5]	Vent Diameter (cm)	Control Efficiency (%)	Basis for Estimate[6]
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

[1]Use the following codes to designate vessel type:

F = Fixed roof
CIF = Contact internal floating roof
NCIF = Noncontact internal floating roof
EFR = External floating roof
P = Pressure vessel (indicate pressure rating)
H = Horizontal
U = Underground

[2]Use the following codes to designate floating roof seals:

MS1 = Mechanical shoe, primary
MS2 = Shoe-mounted secondary
MS2R = Rim-mounted, secondary
LM1 = Liquid-mounted resilient filled seal, primary
LM2 = Rim-mounted shield
LMW = Weather shield
VM1 = Vapor mounted resilient filled seal, primary
VM2 = Rim-mounted secondary
VMW = Weather shield

[3]Indicate weight percent of the listed substance. Include the total volatile organic content in parenthesis

[4]Other than floating roofs

[5]Gas/vapor flow rate the emission control device was designed to handle (specify flow rate units)

[6]Use the following codes to designate basis for estimate of control efficiency:

C = Calculations
S = Sampling

[ ] Mark (X) this box if you attach a continuation sheet.

PART E NON-ROUTINE RELEASES

10.23 Indicate the date and time when the release occurred and when the release ceased or was stopped. If there were more than six releases, attach a continuation sheet and list all releases.

No nonroutine releases of this compound

Release	Date Started	Time (am/pm)	Date Stopped	Time (am/pm)
1	NA	NA	NA	NA
2	NA	NA	NA	NA
3	NA	NA	NA	NA
4				
5				
6				

10.24 Specify the weather conditions at the time of each release.

Release	Wind Speed (km/hr)	Wind Direction	Humidity (%)	Temperature (°C)	Precipitation (Y/N)
1	NA	NA	NA	NA	NA
2	NA	NA	NA	NA	NA
3	NA	NA	NA	NA	NA
4	NA	NA	NA	NA	NA
5	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA

[ ] Mark (X) this box if you attach a continuation sheet.

10.25 Complete the following information for each media into which the listed substance was released. Any volatile substance that was released to land, but that was expected to volatilize, should be listed as a release to air.

Release No. ..... NA

Media	Quantity (kg)	Method of Release	Migration Beyond Boundaries (Y/N)	Quantity Migrated (kg)
Land	NA	NA	NA	NA
Air	NA	NA	NA	NA
Groundwater	NA	NA	NA	NA
Surface water	NA	NA	NA	NA

10.26 Specify the physical state and concentration of the listed substance at the time and point of release.

Release No. ..... NA

Point of release ..... NA

Physical state ..... NA

Concentration (%) ..... NA

[ ] Mark (X) this box if you attach a continuation sheet.

10.33 Indicate which of the prevention practices and policies listed in question 10.32 were ineffective in preventing the release from reaching the environment.

Release No. ..... NO NON-ROUTINE RELEASES ..... _____

10.34 Describe all repairs and/or preventive measures (management practices, operational changes, etc.) made to equipment or operations as a result of the release.

Release No. ..... _____

10.35 Describe additional preventive measures that will be taken to minimize the possibilities of recurrence.

Release No. ..... _____

[ ] Mark (X) this box if you attach a continuation sheet.

APPENDIX I: List of Continuation Sheets

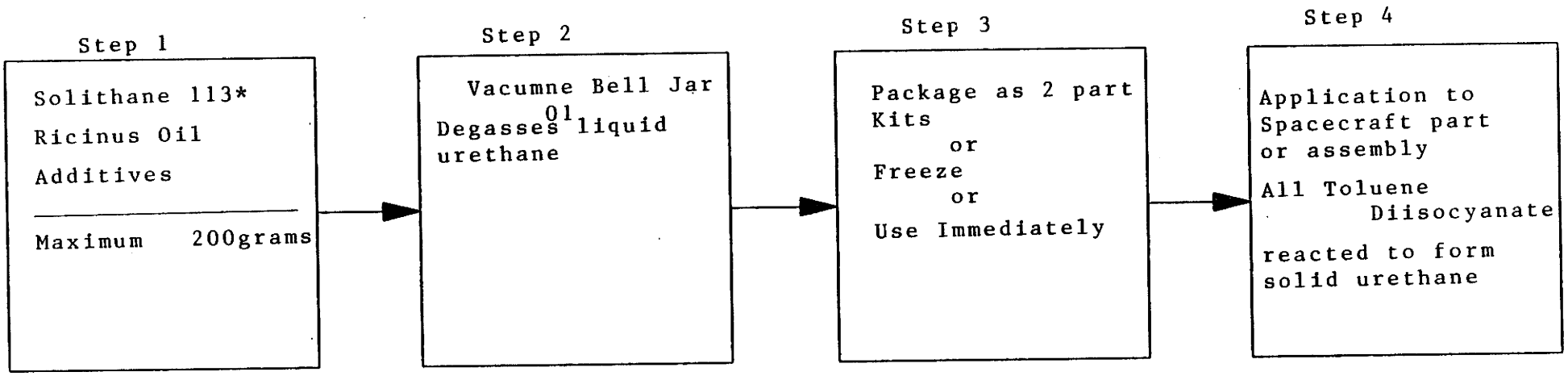
Attach continuation sheets for sections of this form and optional information after this page. In column 1, clearly identify the continuation sheet by listing the question number to which it relates. In column 2, enter the inclusive page numbers of the continuation sheet for each question number.

Question Number (1)	Continuation Sheet Page Numbers (2)
7.01 7.02 7.03	44
8.01 8.02 8.03	50
9.04	91
Appendix 2 MSDS	

[ ] Mark (X) this box if you attach a continuation sheet.

Process Stream ID Code A

Spacecraft Urethane Coating Mixture



*contains 6-7% toluenediisocyanate

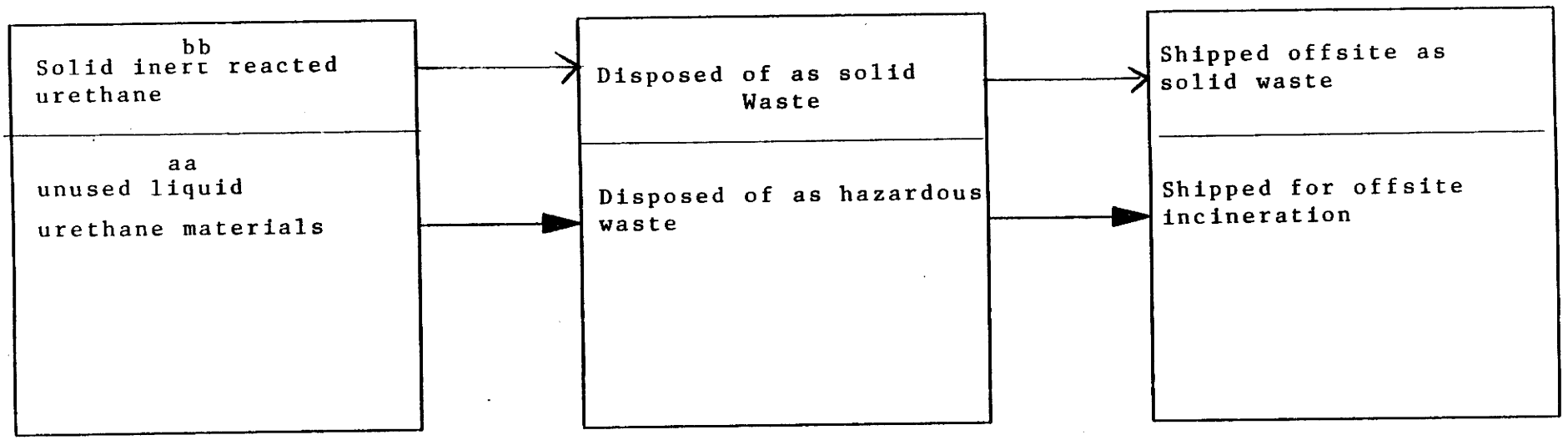
Yearly process = 47kg solithane 113

Residuals steps 1&3 unused urethane material liquid ID code aa

Residuals step 4 solid urethane products ID code bb

8.01 8.03

Spacecraft urethane coating mixture

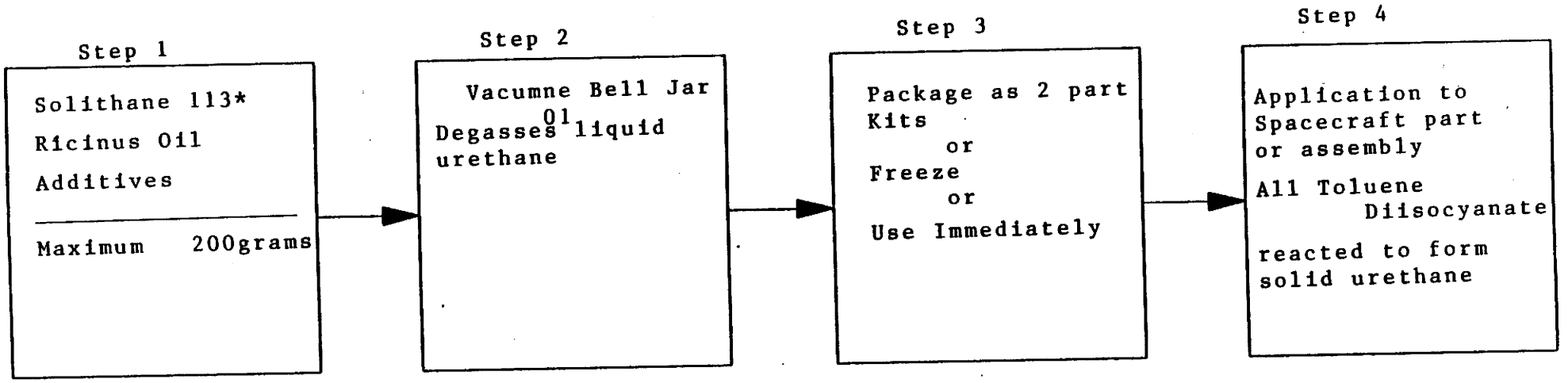


Process Stream ID Code A

Spacecraft Urethane Coating Mixture

Steps 1,2&3 take Place in the Mix Lab 1 full time employee

Step 4 takes place in controlled clean room



*contains 6-7% toluenediisocyanate

Yearly process = 47kg solithane 113

Residuals steps 1&3 unused urethane material liquid ID code aa

Residuals step 4 solid urethane products ID code bb

MORTON THIOKOL INC.
Morton Chemical Division

Material Safety Data Sheet

SECTION I: PRODUCT IDENTIFICATION

PRODUCT NAME:	S-113
CHEMICAL NAME:	Isocyanate Terminated Polyol
COMMON NAME:	Isocyanate Terminated Polyol
CAS NUMBER:	None
PRODUCT USE:	Coatings and Castings
EMERGENCY PHONE:	815-338-1800 (24 hours/day)
OTHER EMERGENCY PHONE:	312-807-3142
EFFECTIVE DATE:	December, 1987
SUPERSEDES:	October 15, 1986

SECTION II: HAZARDOUS INGREDIENTS

			OSHA	ACGIH/TLV	
CHEMICAL NAME/COMMON NAME	CAS NO.	% 1	PEL 2	TWA	STEL
Toluene Diisocyanate TDI	584-84-9	6-7	0.02ppm	0.005ppm	0.02ppm

1 Typical amount, not a specification
2 Governed by a ceiling limit value (c) - The value which should not be exceeded even instantaneously.

SECTION III: PHYSICAL DATA

BOILING POINT (760 mm Hg):	482 degrees F (250 degrees C)
SPECIFIC GRAVITY (Water = 1):	1.073
VAPOR PRESSURE (mm Hg):	Not applicable -
VAPOR DENSITY (Air=1):	> 6
% NONVOLATILE:	93
pH:	Not applicable
EVAPORATION RATE (Ether=1):	< 1
SOLUBILITY IN WATER:	Not applicable
APPEARANCE:	Pale Yellow
ODOR:	Irritating Pungent Odor

SECTION IV: FIRE AND EXPLOSION DATA

FLASH POINT: > 200 degrees F (> 94 degrees C)
FLAMMABLE LIMITS Lel: Not Applicable Uel: Not Applicable
METHOD USED: SETAFLASH
EXTINGUISHING MEDIA: Foam, dry chemical.
SPECIAL FIRE FIGHTING PROCEDURES: Fire fighters should wear NIOSH/MSHA approved self-contained positive pressure breathing apparatus.
UNUSUAL FIRE AND EXPLOSION HAZARDS: None as far as known.
HAZARDOUS DECOMPOSITION PRODUCTS: If burned, gives off carbon monoxide, carbon dioxide, nitrogen oxides, aromatic amines, aldehydes, and hydrogen cyanide.

SECTION V: HEALTH HAZARD DATA

ORAL TOXICITY: Unknown for product mixture. Animal experiments indicate that the toxic effects of TDI or polymeric isocyanates, when ingested, are slight. The LD50 in rats for TDI is 5840mg/Kg. From these experiments, it is believed that ingestion of TDI or polymeric isocyanates would not be fatal to humans, but could result in irritation and corrosive action on the mouth and stomach tissue. See 3

DERMAL TOXICITY: Unknown for product mixture. Isocyanates react with skin protein and tissue moisture. If not promptly removed, liquid spills on the skin can cause reddening, swelling, and blistering of exposed skin. REPEATED SKIN CONTACT HAS CAUSED SKIN SENSITIZATION IN HUMANS AND SHOULD BE AVOIDED.

TDI: Skin-Rabbit: 500 mg/24H MOD See Note 3

EYE TOXICITY: Unknown for product mixture. EYE CONTACT - LIQUID ISOCYANATES SPLASHED INTO THE EYES CAN BE HARMFUL TO THE DELICATE EYE TISSUE AND MUST BE AVOIDED. Injury results from reaction of the isocyanate with the eye fluid which may dehydrate the tissue and result in severe irritation of the eyelid and possible damage to the cornea (corneal opacity). Exposure to high concentrations of isocyanate vapor can lead to formation of solid crystals in the eye fluid causing mechanical irritation of the eyes hours after exposure.

TDI Eye-Rabbit: 100 mg SEV See Note 3

INHALATION TOXICITY: Unknown for product mixture. Inhalation of isocyanate vapors can produce severe irritation of the mucous membranes in the respiratory tract, i.e. nose, throat, and lungs. Exposure of humans to concentrations of isocyanate vapor in excess of the maximum acceptable concentration has caused illness characterized by breathlessness, chest discomfort and reduced pulmonary function. Massive exposure to high concentrations has caused, within minutes, irritation of the trachea and larynx and severe coughing spasms. Massive exposure may also lead to bronchitis, bronchial spasm, and/or pulmonary edema (chemical pheumonitis). Concentrations of isocyanate vapors should be maintained below the TLV by engineering controls. Can cause sensitization in humans.

TDI Inhalation-Human TCLO: 0.02 ppm/2Y:PUL See Note 3

TDI Inhalation-Human TCLO: 0.5 ppm:IRR See Note 3

CHRONIC TOXICITY: Unknown for product mixture. Toluene Diisocyanate (TDI) is considered a suspect carcinogen as tested by National Toxicology Program, 1983, in rats and female mice. Administered by gavage to rats, TDI caused subcutaneous neoplasms or cancers in both sexes. Additionally, males developed pancreatic neoplasms and females pancreatic, liver and mammary neoplasms. In mice similarly exposed, TDI caused circulatory neoplasms and cancers (combined) and liver neoplasms in females but was not carcinogenic to males. (NTP 1983 Program Tech Report on Carcinogenic Study of Commercial Grade of TDI.)

EFFECTS OF OVEREXPOSURE:

INGESTION:	Not established for product mixture. Possible nausea, vomiting, and gastrointestinal pain.
SKIN CONTACT:	Not established for product mixture. May cause irritation, dermatitis and possible skin sensitization given prolonged or repeated skin contact.

3 R.T.E.C.S. 1981-82 CZ6300000

EYE CONTACT:	Not established for product mixture. Possible irritation, tearing, reddening and blurred vision.
INHALATION:	Not established for product mixture. Possible respiratory tract, mucous membrane irritation, sensitization. Symptoms may be delayed and could include dry cough, chest tightness, wheezing, shortness of breath, asthmatic type symptoms.
ACUTE SYSTEMIC:	Overexposure may cause irritation of the eyes, nose and throat. Severe overexposure may cause weakness, drowsiness, and unconsciousness.
CHRONIC SYSTEMIC:	Signs and symptoms from chronic exposure resemble those from acute mishaps but are in part systemically more severe. Extended exposure to isocyanates can cause sensitization resulting in asthmatic type symptoms.

NOTES: Toxicity testing on the product mixture has not been conducted. Comments listed in HEALTH HAZARD DATA pertain to the isocyanate listed in HAZARDOUS INGREDIENTS.

MEDICAL CONDITIONS GENERALLY RECOGNIZED AS BEING AGGRAVATED BY EXPOSURE: Persons with preexisting skin disorders may be more susceptible to isocyanate. In persons with impaired pulmonary function, especially those with obstructive airway diseases, the breathing of isocyanate vapors may cause exacerbation of symptoms due to irritant properties of the isocyanate.

SECTION VI: EMERGENCY HEALTH AND FIRST AID PROCEDURES

EYE CONTACT: Immediately flush with water for 15 minutes lifting the upper and lower eyelids occasionally and obtain immediate medical attention.

SKIN CONTACT: Remove contaminated clothing. Wash exposed areas thoroughly with soap and water. Wash contaminated clothing thoroughly before reuse. If irritation is present after washing, get medical attention.

INHALATION: Move to an area with fresh air and free from risk of further exposure. Administer artificial respiration as required. Obtain medical attention.

INGESTION: Do not induce vomiting. Obtain immediate medical attention. If unavailable, contact nearest Poison Control Center.

NOTE TO PHYSICIAN: May cause weakness, drowsiness, unconsciousness, irritation of eyes, nose and throat, nausea, possible sensitization, coughing, tightness of chest (TDI). No known antidote. Supportive therapy is recommended. Careful lavage may be indicted after ingestion.

SECTION VII: REACTIVITY DATA

STABILITY: Stable under ordinary storage conditions.

HAZARDOUS CONDITIONS TO AVOID: Storage at temperatures above 110 degrees F (43 degrees C) and moisture contact.

INCOMPATIBILITY: (MATERIALS TO AVOID) Oxidizing substances.

CAN HAZARDOUS POLYMERIZATION OCCUR: No.

HAZARDOUS DECOMPOSITION PRODUCTS AND CONDITIONS: If burned, gives off carbon monoxide, carbon dioxide, nitrogen oxides, aromatic amines, aldehydes, and hydrogen cyanide.

SECTION VIII: SPILL OR LEAK PROCEDURES

RESPONSE TO SPILLS: Stop discharge and contain spill or contaminated material using dike, barrier or other means. Recover with pumping equipment, vacuum truck, sorbent vermiculite or other means. Place contaminated material in suitable container(s) for further handling.

HAZARDS TO BE AVOIDED: Do not flush into stream, other bodies of water or storm sewer. Avoid contact with skin or clothing. Other hazards see Section IV FIRE AND EXPLOSION DATA and Section V HEALTH HAZARD DATA.

SPILL NOTIFICATION: Check Federal and State reporting regulations.

DISPOSAL METHODS:

1 Recycle if feasible.
2 Incinerate at authorized facility.
3 Treatment at industrial or liquid treatment facility.
4 Landfill after solidification in a facility authorized to receive waste.

NOTE: THIS MATERIAL, IF BEING DISCARDED, SHOULD BE DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

SECTION IX: CONTROL MEASURES

RESPIRATORY PROTECTION: Wear NIOSH-MSHA approved self-contained positive pressure breathing apparatus as necessary within equipment limitations. Comply with OSHA 1910.134 (CFR), respiratory protection. Contaminant levels will vary dependent on the operation. Industrial hygiene consultation is recommended to assist in respirator selection, use and training.

FOR HANDS, BODY: Chemical resistant gloves recommended for hand protection, work clothing for general body protection.

FOR EYES: Wear safety glasses, chemical goggles or face shield (eight inch minimum).

VENTILATION: Provide adequate ventilation to minimize inhalation. Mechanical (local exhaust) recommended for all spray operations and elevated temperature uses.

SECTION X: SPECIAL PRECAUTIONS

RECOMMENDED STORAGE PRACTICE AND CONDITIONS: Store between 50 and 100 degrees F (10 and 38 degrees C). Storage at higher temperatures causes polymerization.

OTHER PRECAUTIONS: For industrial use only. Eye wash and shower should be available. Use only under well ventilated conditions. For personal hygiene protection, personnel should wash thoroughly after handling product. Always wash up before eating, smoking, or using washroom facilities. Do not breathe vapor. Do not contact eyes, skin, and or clothing.

SECTION XI: LABELING INFORMATION

DOT SHIPPING NAME:	Not regulated by DOT
DOT IDENTIFICATION NO.:	Not applicable
DOT LABEL:	Not applicable
MORTON PRECAUTIONARY LABEL:	177

SECTION XII: USER'S RESPONSIBILITY

A bulletin such as this cannot be expected to cover all possible situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions in addition to those described herein, are required. Any health hazard and safety information contained herein should be passed on to your customers or employees, as the case may be. Morton Thiokol, Inc. must rely on the user to utilize the information we have supplied to develop work practice guidelines and employee instructional programs for the individual operation.

DISCLAIMER OF LIABILITY

The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. Users of any chemical should satisfy themselves that the conditions and methods of use assure that the chemical is used safely. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO THE INFORMATION CONTAINED HEREIN OR THE CHEMICAL TO WHICH THE INFORMATION REFERS. It is the responsibility of the user to comply with all applicable federal, state, and local laws and regulations.

Nothing contained herein is to be construed as a recommendation for use in violation of any patents or of applicable laws or regulations.

Morton Thiokol, Inc.
Morton Chemical Division
333 West Wacker Drive
Chicago, Illinois 60606-1292
(312) 807-2000

GE Astro Space

Astro-Space Division
General Electric Company
P.O. Box 800, Princeton, NJ 08543-0800

Document Processing Center
Office of Toxic Substances, TS-790
U.S. Environmental Protection Agency
401 M Street, SW
Washington, DC 20460
Attn: CAIR Reporting Office

First Class Mail

GC 517 (3-88)